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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/965,831
Filing Date: October 01, 2001
Appellant(s): TAM ET AL.

Brian N. Fletcher
Reg. No. 51,683
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 09 December 2008 appealing from the Office action mailed 20 May 2008.

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(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The 112 first and second paragraph rejections of claims 25 and 27 are withdrawn.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

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(8) Evidence Relied Upon

6,226,618	DOWNS	5-2001
2002/0027994	KATAYAMA	3-2002
6,714,683	TIAN	3-2004

Bruce Schneier, Applied Cryptography, 1996. John Wiley & Sons, Inc. Pages 351-353, 355.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 18, 19, 21, 25-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Katayama, U.S. Publication, No. 2002/0027994.

Referring to claim 18, Katayama discloses an audio distribution system wherein an audio signal separated by a band separation filter into a plurality of frequency bands ([0078] & Figure 4b). The high frequency section is encrypted in a manner that is decryptable with a key that is embedded in the basic section of the signal ([0081] & [0082] & [0086]), which meets the limitation of a watermarked audio signal stored in a memory or a computer readable medium comprising at least two sections each having audio content and corresponding to a respective time period of said audio signal, said sections including a first section which is distorted in a manner recoverable by means of a key obtainable from audio content in at least one other section.

Referring to claim 19, Katayama discloses that the high frequency section is encrypted in a manner that is decryptable with a key that is embedded in the basic section of the signal

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([0081] & [0082] & [0086]), which meets the limitation of said first section is a section to which access is restricted.

Referring to claim 21, Katayama discloses that the low quality section allows users to sample audio content ([0089]), which meets the limitation of said at least one other section comprises a trial listening section.

Referring to claims 25-27, Katayama discloses an audio distribution system wherein an audio signal separated by a band separation filter into a plurality of frequency bands ([0078] & Figure 4b), which meets the limitation of sectioning said signal into a first section. The high frequency section is encrypted in a manner that is decryptable with a key that is embedded in the basic section of the signal ([0081] & [0082] & [0086]), which meets the limitation of generating distortion of said first section in manner recoverable by a key obtainable from said trial listening section. The low quality section allows users to sample audio content ([0089]), which meets the limitation of sectioning a trial listening section and can be considered the claimed advertisement section because the claims require both the advertisement section and the trial listening section to include the actual audio content. The entire segmented signal is distributed such only the low quality section can be played back without having purchased rights to the high quality section ([0089]-[0090] & Figure 4b), which meets the limitation of said first section and said advertisement/trial listening section correspond to respective time periods of said audio signal, appending said distorted section to said trial listening section, wherein the key is obtainable from said advertisement audio content in said section.

Referring to claim 28, Katayama discloses an audio distribution system wherein an audio signal separated by a band separation filter into a plurality of frequency bands ([0078] & Figure

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4b), which meets the limitation of sectioning said signal into at least two sections having media content, each section corresponding to a respective period of time of said signal. Each section is marked (Figure 4b), which meets the limitation of marking at least one of the said sections whereby said sections may be identified. The high frequency section is encrypted in a manner that is decryptable with a key that is embedded in the basic section of the signal ([0081] & [0082] & [0086]), which meets the limitation of generating distortion in one of said sections of said signal in a manner recoverable by a key obtainable from at least one other section having media content, wherein said key is, obtainable from said media content in said one or more other sections. The entire segmented signal is distributed such only the low quality section can be played back without having purchased rights to the high quality section ([0089]-[0090] & Figure 4b), which meets the limitation of appending said distorted section to said one or more other sections to form a composite signal comprising a distorted section and at least one undistorted section.

Claims 1, 5, 8, 9-13, 15-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Downs, U.S. Patent No. 6,226,618, in view of Katayama, U.S. Publication No. 2002/0027994.

Referring to claims 1, 18, 23, 28, Downs discloses an electronic content delivery system wherein an uncompressed audio file is watermarked with identification data (Col. 18, steps 121-125), which meets the limitation of incorporating watermarking information into said audio signal to form a watermarked audio signal. The watermarked content is encrypted using a symmetric key that is packed along with the content (Col. 18, steps 125-127), which meets the

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limitation of generating distortion of said signal in a manner recoverable by a key. Downs does not disclose that the watermarked content is sectioned into at least two sections each having audio content, a key obtainable from at least one other section having audio content, and appending said distorted section to said at least one other section to form a composite signal comprising a distorted section and at least one undistorted section. Katayama discloses an audio distribution system wherein an audio signal separated by a band separation filter into a plurality of frequency bands ([0078] & Figure 4b), which meets the limitation of section said audio signal into at least two sections each section having audio content, each of said sections corresponds to a respective time period of said audio signal. Each section is marked (Figure 4b), which meets the limitation of marking at least one of the said sections whereby said sections may be identified. The high frequency section is encrypted in a manner that is decryptable with a key that is embedded in the basic section of the signal ([0081] & [0082] & [0086]), which meets the limitation of generating distortion in a first one of said sections of said signal in a manner recoverable by a key obtainable from at least one other section having audio content. The entire segmented signal is distributed such only the low quality section can be played back without having purchased rights to the high quality section ([0089]-[0090] & Figure 4b), which meets the limitation of appending said distorted section to said at least one other section to form a composite signal comprising a distorted section and at least one undistorted section. It would have been obvious to one of ordinary skill in the art at the time the invention was made to segment the watermarked audio of Downs into high and low frequency sections and encrypt only the high frequency section in a manner decryptable with a key embedded in the basic section of the audio signal, in order to provide users a chance to sample the audio content before deciding

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whether to purchase the audio content while providing content providers a means to prevent illegal use and illegal copying of high sound quality audio contents as taught by Katayama ([0009] & [0089]).

Referring to claims 5, 8, 9, 19, Katayama discloses that the high frequency section is encrypted in a manner that is decryptable with a key that is embedded in the basic section of the signal ([0081] & [0082] & [0086]), which meets the limitation of said key is obtainable directly from a sequence of bits contained in said audio content of at least one other section, a bitstream of said first section is subject to a scrambling function to create said distortion, said first section comprises a section to which access is to be restricted. It would have been obvious to one of ordinary skill in the art at the time the invention was made to segment the watermarked audio of Downs into high and low frequency sections and encrypt only the high frequency section in a manner decryptable with a key embedded in the basic section of the audio signal, in order to provide users a chance to sample the audio content before deciding whether to purchase the audio content while providing content providers a means to prevent illegal use and illegal copying of high sound quality audio contents as taught by Katayama ([0009] & [0089]).

Referring to claims 10-12, 20-22, Downs discloses the content can contain a store advertisement object (Col. 85, line 50). Downs does not disclose that the watermarked content is sectioned into at least two sections each having audio content. Katayama discloses an audio distribution system wherein an audio signal separated by a band separation filter into a plurality of frequency bands ([0078] & Figure 4b). The low quality section allows users to sample audio content ([0089]), which meets the limitation of said at least one other section comprises a trial listening section and an advertisement section. It would have been obvious to one of ordinary

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skill in the art at the time the invention was made to segment the watermarked audio of Downs into high and low frequency sections and encrypt only the high frequency section in a manner decryptable with a key embedded in the basic section of the audio signal, in order to provide users a chance to sample the audio content before deciding whether to purchase the audio content while providing content providers a means to prevent illegal use and illegal copying of high sound quality audio contents as taught by Katayama ([0009] & [0089]).

Referring to claim 13, Downs discloses that the watermarked audio signal is compressed (Col. 18, step 125).

Referring to claim 15, Katayama discloses that the format of the segmented audio is MP3 [0046]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to segment the watermarked audio of Downs into high and low frequency sections and encrypt only the high frequency section in a manner decryptable with a key embedded in the basic section of the audio signal, in order to provide users a chance to sample the audio content before deciding whether to purchase the audio content while providing content providers a means to prevent illegal use and illegal copying of high sound quality audio contents as taught by Katayama ([0009] & [0089]).

Referring to claims 16, 24, Katayama discloses that the decryption key is extracted from the basic section of the signal and used to decrypt the high quality section of the signal for playback ([0085]-[0086]), which meets the limitation of reading said composite signal, identifying said sections, obtaining said key from said at least one undistorted section, and recovering said distorted section. It would have been obvious to one of ordinary skill in the art at the time the invention was made to segment the watermarked audio of Downs into high and low

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frequency sections and encrypt only the high frequency section in a manner decryptable with a key embedded in the basic section of the audio signal, in order to provide users a chance to sample the audio content before deciding whether to purchase the audio content while providing content providers a means to prevent illegal use and illegal copying of high sound quality audio contents as taught by Katayama ([0009] & [0089]).

Referring to claim 17, Downs discloses that decryption is performed in real-time (Col. 82, line 52).

Referring to claims 25-27, Downs discloses an electronic content delivery system wherein an uncompressed audio file is watermarked with identification data (Col. 18, steps 121-125). The watermarked content is encrypted using a symmetric key that is packed along with the content (Col. 18, steps 125-127), which meets the limitation of generating distortion of said signal in a manner recoverable by a key. The content can contain a store advertisement object (Col. 85, line 50), which meets the limitation of creating an audio signal having audio content and an advertisement section. Downs does not disclose that the watermarked content is sectioned into at least two sections each having audio content, a key obtainable from at least one other section having audio content, and appending said distorted section to said at least one other section to form a composite signal comprising a distorted section and at least one undistorted section. Katayama discloses an audio distribution system wherein an audio signal separated by a band separation filter into a plurality of frequency bands ([0078] & Figure 4b), which meets the limitation of section said audio signal into at least two sections each section having audio content. The high frequency section is encrypted in a manner that is decryptable with a key that is embedded in the basic section of the signal ([0081] & [0082] & [0086]), which meets the

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limitation of generating distortion in a first one of said sections of said signal in a manner recoverable by a key obtainable from at least one other section having audio content. The low quality section allows users to sample audio content ([0089]), which meets the limitation of said at least one other section comprises a trial listening section and an advertisement section. The entire segmented signal is distributed such only the low quality section can be played back without having purchased rights to the high quality section ([0089]-[0090] & Figure 4b), which meets the limitation of said first section and said advertisement/trial listening section corresponding to respective time periods of said audio signal, appending said distorted section to said at least one other section to form a composite signal comprising a distorted section and at least one undistorted section. It would have been obvious to one of ordinary skill in the art at the time the invention was made to segment the watermarked audio of Downs into high and low frequency sections and encrypt only the high frequency section in a manner decryptable with a key embedded in the basic section of the audio signal, in order to provide users a chance to sample the audio content before deciding whether to purchase the audio content while providing content providers a means to prevent illegal use and illegal copying of high sound quality audio contents as taught by Katayama ([0009] & [0089]).

Claims 6, 7, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Downs, U.S. Patent No. 6,226,618, in view of Katayama, U.S. Publication No. 2002/0027994, further in view of Schneier.

Referring to claims 6, 7, Downs discloses that the content is encrypted using a symmetric key that is packed along with the content (Col. 18, steps 125-127), but does not disclose

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encrypting using a hash output. Schneier discloses a method of symmetric encryption that hashes the file to be encrypted and then encrypts the file using the hash output (Pages 351-353). It would have been obvious to one of ordinary skill in the art at the time the invention was made to encrypt the audio files of Downs using the output of the audio file hashes because that encryption process performs faster than other symmetric encryption algorithms as taught in Schneier (Page 355).

Referring to claim 14, Downs discloses that the watermarked audio signal is compressed (Col. 18, step 125).

Claims 3, 4, 29, 30, 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Downs, U.S. Patent No. 6,226,618, in view of Katayama, U.S. Publication No. 2002/0027994, further in view of Tian, U.S. Patent No. 6,714,683.

Referring to claims 29, 30, 33-36, Downs discloses an electronic content delivery system wherein an uncompressed audio file is watermarked with identification data (Col. 18, steps 121-125), which meets the limitation of incorporating watermarking information into said media content signal, said media content signal is an audio signal. The watermark can survive several steps of content processing (Col. 22, lines 4-8), which meets the limitation of a robust watermarking technique to form a watermarked media content signal. The content is encrypted using a symmetric key that is packed along with the content (Col. 18, steps 125-127), which meets the limitation of generating distortion in at least a part of said watermarked media content signal in a manner recoverable by a key. Downs does not disclose embedding said key in at least a part of said watermarked media content signal using a fragile data hiding technique, whereby if

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said watermarking information is corrupted, altered or removed said embedded key is rendered unobtainable from said media content signal. Katayama discloses an audio distribution system wherein an audio signal separated by a band separation filter into a plurality of frequency bands ([0078] & Figure 4b). The high frequency section is encrypted in a manner that is decryptable with a key that is embedded in the basic section of the signal ([0081] & [0082] & [0086]), which meets the limitation of embedding said key in at least a part of said watermarked media content signal, a media content layer having one or more sections comprising media content, said section or at least of said sections if there is more than one section, being distorted in a manner recoverable by use of said key, said key is embedded in said audio content of said at least one other section. It would have been obvious to one of ordinary skill in the art at the time the invention was made to segment the watermarked audio of Downs into high and low frequency sections and encrypt only the high frequency section in a manner decryptable with a key embedded in the basic section of the audio signal, in order to provide users a chance to sample the audio content before deciding whether to purchase the audio content while providing content providers a means to prevent illegal use and illegal copying of high sound quality audio contents as taught by Katayama ([0009] & [0089]). Katayama does not disclose that the key is embedded using a fragile data hiding technique. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to embed the key in Katayama using a fragile data hiding technique in order to detect transformations performed on the data as taught by Tian (Col. 5, lines 7-11).

Referring to claim 3, Downs discloses that the symmetric key is randomly generated (Col. 15, lines 63-65), which meets the limitation of said distortion is generated by creating a

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pseudo-random number sequence for adding as pseudo-random noise to said first said section, and wherein said pseudo-random number sequence is embedded in said at least one other section to enable said random noise to be subsequently removed.

Referring to claim 4, encryption is a form of scrambling.

Claims 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Downs, U.S. Patent No. 6,226,618, in view of Katayama, U.S. Publication No. 2002/0027994, further in view of Tian, U.S. Patent No. 6,714,683 as applied to claim 29 above, and further in view of Rhoads, U.S. Patent No. 5,636,292.

Referring to claims 31-32, Downs discloses an electronic content delivery system wherein an uncompressed audio file is watermarked with identification data (Col. 18, steps 121-125), which meets the limitation of said media content signal is an audio signal. Katayama discloses an audio distribution system wherein an audio signal separated by a band separation filter into a plurality of frequency bands ([0078] & Figure 4b). The high frequency section is encrypted in a manner that is decryptable with a key that is embedded in the basic section of the signal ([0081] & [0082] & [0086]), which meets the limitation of watermarking information is embedded across said at least two sections. Katayama does not disclose embedding the key across at least two sections. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to embed the key of Katayama in the low quality section in addition to the basic section in order to make the key retrieval from multiple sections of content as taught by Rhoads (Col. 2, lines 1-9).

(10) Response to Argument

Appellant argues, "Katayama fails to disclose that each section corresponds to a respective time period of the audio signal." This argument is not persuasive because Katayama discloses an audio distribution system wherein an audio signal separated by a band separation filter into a plurality of frequency bands ([0078] & Figure 4b). The high frequency section is encrypted in a manner that is decryptable with a key that is embedded in the basic section of the signal ([0081] & [0082] & [0086]). Each audio section of Katayama can be considered to include the time period from beginning to end.

Appellant appears to be arguing that the claimed "respective time period" must be interpreted as a portion of the entire audio signal and not the entire audio signal. However, the claim limitations do not reflect this interpretation. Using a broad but reasonable interpretation the entire audio signal can be considered "a respective time period".

Appellant argues, "the claimed subject matter can prevent the advertisement from being removed because the advertisement contains a key necessary for removing the distortion from the main content section of the signal. The arrangement disclosed in Katayama cannot protect an advertisement in this way." The Examiner would like to initially point out that the claims do not include a limitation that "can prevent the advertisement from being removed." Katayama discloses an audio distribution system wherein an audio signal separated by a band separation filter into a plurality of frequency bands ([0078] & Figure 4b). The high frequency section is encrypted in a manner that is decryptable with a key that is embedded in the basic section of the signal ([0081] & [0082] & [0086]). The basic quality section allows users to sample audio content ([0089]), which meets the limitation of an advertisement section because the claims

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require both the advertisement section and the trial listening section to include the actual audio content.

Appellant's arguments for claims 26-28 mirror the above and have been fully addressed.

Appellant argues, "Neither Downs nor Katayama discloses sectioning of a signal into at least two sections each corresponding to a respective time period and generating distortion in one of the sections in a manner recoverable by a key obtainable from at least one other section of the signal." This argument is not persuasive because Katayama discloses an audio distribution system wherein an audio signal separated by a band separation filter into a plurality of frequency bands ([0078] & Figure 4b). The high frequency section is encrypted in a manner that is decryptable with a key that is embedded in the basic section of the signal ([0081] & [0082] & [0086]). Each audio section of Katayama can be considered to include the time period from beginning to end.

Appellant appears to be arguing that the claimed "respective time period" must be interpreted as a portion of the entire audio signal and not the entire audio signal. However, the claim limitations do not reflect this interpretation. Using a broad but reasonable interpretation the entire audio signal can be considered "a respective time period".

Appellant argues, "One of ordinary skill would recognize that 'encryption' and 'distortion' are not the same. For example, an 'audio signal' is by definition playable. After it has been distorted, it is playable but only in distorted form. On the other hand, an encrypted signal cannot be played back (not even in distorted form) until it is first unencrypted." In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the ability to play the distorted audio

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signal) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to Appellant contention that encryption is different from distortion, the Examiner would like to point out that encryption of an audio signal would meet the claimed distortion using a broad but reasonable interpretation since the actual audio content would be considered distorted when it is encrypted.

Appellant argues, “The Content S.C. and the Metadata S.C. packages cannot reasonably be interpreted as being part of the ‘same signal’ and therefore Downs fails to disclose this feature of claim 1.” In response, the Examiner never relied on Downs to teach this claimed feature. It is clear from paragraph 18 of the Final Office action dated 20 May 2008 (Final), that Katayama is relied upon to teach the limitations in question. The manner with which Katayama meets the limitations in question, has been fully addressed above.

Appellant argues, “there is no reason for a person skilled in the art to combine Katayama and Downs in the manner described. In Downs, an audio clip is already available from the vendor website. Therefore, there would be no point in making a complicated modification to the Content S.C. to have low and high quality sections or to add further keys.” This argument is not persuasive because the modification as proposed would eliminate the need to store an entirely separate section of “sample” audio clips. Instead, as modified, Downs would only store the distributed content while providing the users a chance to sample the audio content before deciding whether to purchase the audio content while providing content providers a means to

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prevent illegal use and illegal copying of high sound quality audio contents as taught by Katayama ([0009] & [0089]).

Appellant argues, “even if Downs and Katayama were combined, the resulting combination would fail to result in the structure, method steps and advantage of Appellant's claims, as there would be no sectioning by 'time period'”. This argument has been fully addressed above.

Appellant argues, “the Examiner alleges that Downs discloses that the content can store an advertisement object.” In response, the Examiner actually stated that the “low quality section” of Katayama meet the claimed advertisement and trial sections (See pages 9-10 of the 'Final'). This low quality section can meet the claimed advertisement and trial sections because the claims require both the advertisement section and the trial listening section to include the actual audio content.

Appellant argues, “contrary to the Examiner’s reasoning, Downs does not disclose ‘embedding said key in at least a part of said watermarked media content signal.’” In response, the Examiner would like to point out the Examiner did not rely on Downs to teach this claim limitation. Instead, as discussed above, Katayama was relied upon to teach the limitation in question (See pages 13-14 of the 'Final'). Specifically, the Examiner stated that:

Katayama discloses an audio distribution system wherein an audio signal separated by a band separation filter into a plurality of frequency bands ([0078] & Figure 4b). The high frequency section is encrypted in a manner that is decryptable with a key that is embedded in the basic section of the signal ([0081] & [0082] & [0086]), which meets the limitation of embedding said key in at least a part of said watermarked media content signal, a media content layer having one or more sections comprising media content, said section or at least of said sections if there is more than one section, being distorted in a manner recoverable by use of said key, said **key is embedded in said audio content of said at least one other section**. It would have been obvious to one of ordinary skill in the art at the time the invention was made to segment the watermarked audio of Downs into

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high and low frequency sections and encrypt only the high frequency section in a manner decryptable with a key embedded in the basic section of the audio signal, in order to provide users a chance to sample the audio content before deciding whether to purchase the audio content while providing content providers a means to prevent illegal use and illegal copying of high sound quality audio contents as taught by Katayama ([0009] & [0089]). **Katayama does not disclose that the key is embedded using a fragile data hiding technique. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to embed the key in Katayama using a fragile data hiding technique in order to detect transformations performed on the data as taught by Tian (Col. 5, lines 7-11).**

Appellant argues, “There is no disclosure in Tian that the watermark might contain a ‘key’ used for recovering a distorted section of the media content.” In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Appellant argues, “even if a person skilled in the art did decide to combine Tian and Downs, the only likely result is that they would choose to embed the watermark using a robust or semi-fragile method...It is extremely unlikely that they would decide that the ‘key’ disclosed in Katayama should be embedded by way of a ‘fragile watermark’.” This argument is not persuasive because a semi-fragile watermark meets the claimed fragile watermark. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to embed the key in Katayama using a fragile data hiding technique in order to detect transformations performed on the data as taught by Tian (Col. 5, lines 7-11).

Appellant’s remaining arguments mirror the previous arguments, and have been fully addressed above.

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(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Benjamin E Lanier/
Primary Examiner, Art Unit 2432

Conferees:

/Jung W Kim/
Primary Examiner, Art Unit 2432

/Gilberto Barron Jr./
Supervisory Patent Examiner, Art Unit 2432